*This information is to be completed by the instructor for the course.

I. **INSTRUCTOR INFORMATION**

   A. Name:

   B. Office:

   C. Office Phone Number:

   D. E-mail Address:

   E. Office Hours:

II. **COURSE INFORMATION**

   A. Course name, number, and credit hours:
      MTH 112, Precalculus Algebra, 3 Semester Credit Hours.

   B. *Section number and reference/synonym number:

   C. *Class meeting time (days, time location):

   D. Prerequisite/Course Description:
      **PREREQUISITE:** A minimum prerequisite of high school Algebra I, Geometry, and Algebra II with an appropriate mathematics placement score. An alternative to this is that the student should successfully pass with a “C” or higher (S if taken as pass/fail) MTH 100, Intermediate College Algebra.
      This course emphasizes the algebra of functions—including polynomial, rational, exponential, and logarithmic functions. The course also covers systems of equations and inequalities, quadratic inequalities, and the binomial theorem. Additional topics may include matrices, Cramer's Rule, and mathematical induction.

   E. Course Objectives:
      The objective of this course is to provide an understanding of concepts, develop competent skills, and demonstrate applications in the following areas:
1. analytic and geometric interpretation of algebraic, exponential, and logarithmic functions,

2. analytic and geometric interpretation of systems of equations and inequalities.

While building on the manipulative skills from algebra, this course strives to develop analytic skills as a preparation for further mathematical applications or courses in mathematics requiring knowledge of algebraic and transcendental functions.

III. TEXTBOOK AND COURSE SUPPORT MATERIALS

A. Textbook:
(Chapters 1, 2, 3, 7, 8, 10; see Topic Outline for sections covered.)

B. *Laboratory manual(s) and/or additional notes/materials/supplies:

C. CD/DVD:
CD/DVD lecture presentations that accompany the textbook may be available for viewing online or in the Mathematics Learning Center.

D. Library and LRC resources and services are accessible on-line at http://lib.calhoun.edu/lib

IV. INSTRUCTIONAL METHODS (Methods of Teaching)

Instructional methods may include, but not be limited to, lectures, class discussions, student presentations, CD/DVD lecture presentations, and computer-generated material. The facilities of the Mathematics Learning Center may be utilized.

MyMathLab is the software used for this course. Homework assignments, chapter exams, sample exams, and/or quizzes may be web-based or paper-based depending on the individual instructor.

V. *GRADING PLAN

Include information on the number and type of evaluation methods (exams, quizzes, labs, homework, papers, etc.) with point or percentage values for each.

VI. GRADE SCALE

The following letter symbols are used to indicate the student’s level of achievement in courses taken:

A   Excellent   (90 – 100)
B   Good        (80 – 89)
C   Average     (70 – 79)
D  Poor  (60 – 69)
F  Failure  (Below 60)
I  Incomplete
W  Withdrawal

VII.  TOPIC OUTLINE  *(Include Tentative Dates and Topics)*

CHAPTER 1  FUNCTIONS AND GRAPHS
1.1  Graphs and Graphing Utilities
1.2  Basic Functions and Their Graphs
1.3  More on Functions and Their Graphs
1.4  Linear Functions and Slope
1.5  More on Slope
1.6  Transformations of Functions
1.7  Combinations of Functions; Composite Functions
1.8  Inverse Functions
1.9  Distance and Midpoint Formulas; Circles
1.10  (Omit)

CHAPTER 2  POLYNOMIAL AND RATIONAL FUNCTIONS
2.1  Complex Numbers
2.2  Quadratic Functions
2.3  Polynomial Functions and Their Graphs
2.4  Dividing Polynomials; Remainder and Factor Theorem
2.5  Zeros of Polynomial Functions
2.6  Rational Functions and Their Graphs
2.7  Polynomial and Rational Inequalities
2.8  Modeling Using Variation

CHAPTER 3  EXPONENTIAL AND LOGARITHMIC FUNCTIONS
3.1  Exponential Functions
3.2  Logarithmic Functions
3.3  Properties of Logarithms
3.4  Exponential and Logarithmic Equations
3.5  Exponential Growth and Decay; Modeling Data

CHAPTER 7  SYSTEMS OF EQUATIONS AND INEQUALITIES
7.1  Systems of Linear Equations in Two Variables
7.2  Systems of Linear Equations in Three Variables
7.3  Partial Fractions
7.4  Systems of Nonlinear Equations in Two Variables
7.5  Systems of Inequalities
7.6  Linear Programming

CHAPTER 8  MATRICES AND DETERMINANTS
8.1  Matrix Solutions to Linear Systems *(Optional)*
8.2  Inconsistent and Dependent Systems and Their Applications *(Optional)*
8.3  Matrix Operations and Their Applications *(Optional)*
8.4  Multiplicative Inverses of Matrices and Matrix Equations *(Optional)*
8.5  Determinants and Cramer’s Rule *(Optional)*
CHAPTER 10 SEQUENCES, INDUCTION, AND PROBABILITY
10.1 Sequences and Summation Notation *(Optional)*
10.2 Arithmetic Sequences *(Optional)*
10.3 Geometric Sequences and Series *(Optional)*
10.4 Mathematical Induction *(Optional)*
10.5 The Binomial Theorem
10.6 *(Omit)*
10.7 *(Omit)*

VIII. *ASSIGNMENTS* *(Weekly or Daily List of Assignments)*

(Include required submission of course requirements as shown in the Grading Plan.)

IX. *FINAL EXAM*

(Include Date, Time, and Location)

Final Examination Attendance
Attendance at final examinations is mandatory. Such examinations are administered in all academic subjects at the end of each semester in accordance with an examination schedule issued by the Dean or designee. Any student who must miss a final examination has the responsibility of notifying his/her instructor to make arrangements to take the final examination on an alternate date, if possible. Faculty members should not change the published class examination schedule without prior approval from the Dean or designee.

X. ATTENDANCE POLICY

**FOR CLASSES OTHER THAN DISTANCE EDUCATION/HYBRID CLASSES:**
Attendance is taken for each class meeting. Absences are counted beginning with the first class meeting after the student registers; however, students are responsible for all coursework and assignments made or due from the first day of class. In general, students should have no more than four absences for a 15-week term, no more than three absences for a 10-week term, no more than two absences for an 8-week term, and no more than one absence for a 5-week term. Each course syllabus will clearly state the number of absences considered as the acceptable maximum for the class as well as how late arrivals and early departures will be handled. Each course syllabus will also state policies regarding make-up work, if allowed. The policies stated in the course syllabus for a student’s specific class will be the policies for which the student will be held accountable. Communication with the instructor concerning absences is essential. If a student has excessive absences, he/she is encouraged to withdraw from the course after consulting with the instructor. Instructors will not withdraw students for any reason. **If a student fails to officially withdraw from a course, this could result in a grade of F and adversely impact financial aid.** Withdrawing from a course is the responsibility of the student.

Therefore, a grade of F will not be changed without written approval from the Vice President of Instruction and Student Services. Military personnel who are...
involuntarily called to active duty for unscheduled and/or emergency situations and those individuals called for jury duty will be excused with official documentation. College related events which the student is required to attend by the club sponsor and which have been approved by the appropriate Dean, will also be excused. Official documentation will be required. Make-up work will be accepted under these excused circumstances as outlined in the individual course syllabus.

**NOTE TO INSTRUCTOR:** For Distance Education/Hybrid classes, pick one or more of the choices below and state in your syllabus how you are tracking.

**FOR DISTANCE EDUCATION/HYBRID CLASSES:**
Attendance in a Distance Education or Hybrid course will be recorded within the **FIRST WEEK** of the course by one or more of the following:

- Student contact with the instructor through attendance at an on-site orientation session;
- Student participation in an online orientation session that is tracked through Blackboard’s “Student Tracking” feature, or through “Tegrity Reports,” or similar features in other course management systems;
- Student sending an e-mail to the instructor’s Calhoun address or through Blackboard e-mail;
- Student making phone call to the instructor’s Calhoun office or an in-person visit to the instructor;
- Student submission (online or in-person) of completed assessments, assignments, essays, or other course related work.

After the first week, the student’s "attendance record" will be based on the student's meeting course requirements such as submitting assignments or communicating with the instructor as outlined in the course syllabus. It is expected that a student will receive a weekly attendance record based on requirements stated in the course syllabus. If a student does not meet attendance requirements as stated in the course syllabus, the student is encouraged to officially withdraw from the course. **Failure to officially withdraw from the course could result in a grade of F and adversely impact financial aid.**

**XI. **MAKE-UP POLICY

(How to make-up missed homework assignments, exams, quizzes, etc.)

**XII. WITHDRAWAL POLICY**

A student who wishes to withdraw from a course(s) after the drop/add period may do so by having a withdrawal form completed by Admissions/Records Personnel or their designated representatives. A student may withdraw from a course(s) after drop/add period through the last class day (prior to final exams). A grade of W for withdrawal will be assigned for the course.
XIII. **DISABILITY STATEMENT**

If you have a disability that might require special materials, services, or assistance, please contact Calhoun's Disability Services Office in the Chasteen Student Center, Second Floor, Room 220G (Decatur Campus) or call (256) 306-2630 or (256) 306-2635.

XIV. **COMMUNICATION**

Calhoun Community College will communicate campus-wide information via SPACE student e-mail. You have a SPACE e-mail account, which you can access from [www.calhoun.edu](http://www.calhoun.edu). Your user name is your first initial, last name, and last four digits of your student ID number (Example: jsmith1234). Your initial password is 'cal' and the last four digits of your student ID number. You will be prompted to change the password.

XV. **GENERAL COMMENTS BY INSTRUCTOR**

A. Children are not allowed to attend classes with students or faculty. No minors should be left unattended in any building of Calhoun Community College.

B. Student Schedules/Grades:
Students may obtain schedule and grade information through the Calhoun Web Site at [www.calhoun.edu](http://www.calhoun.edu) and clicking on the Web Advisor link. A student user name and password is needed to access Web Advisor.

C. **Mathematics Learning Center—Decatur Campus**
The Mathematics Learning Center is located on the first floor of the Science and Mathematics Building, Room 120, where the upper-level mathematics courses are taught. The purpose of the Learning Center is to provide free tutoring and to assist mathematics students with class, lab, and homework assignments. The Learning Center has approximately 48 computers for mathematics students to use and is staffed by a Coordinator and several part-time lab assistants. The hours of the Learning Center may vary from semester to semester. For more information, please call the Mathematics Learning Center at (256) 306-2740, the Mathematics Division Office at (256) 306-2739, or visit our web site at [www.calhoun.edu/mathscience/](http://www.calhoun.edu/mathscience/).

**Mathematics Lab—Huntsville Campus**
The Mathematics Lab is located on the Main Floor in Room 133. The purpose of the Mathematics Lab is to provide free tutoring and to assist mathematics students with class, lab, and homework assignments. The Lab has approximately 34 computers for mathematics students to use and is staffed by a Coordinator and several part-time lab assistants. The hours of the Lab may vary from semester to semester. For more information, please call (256) 890-4733/890-4747, the Mathematics Division Office at (256) 306-2739, or visit our web site at [www.calhoun.edu/mathscience/](http://www.calhoun.edu/mathscience/).

D. *
THIS SYLLABUS IS EFFECTIVE SPRING SEMESTER, 2011.

REVISED 12/10/10